AAH MAR 2006 Report

GUIDELINES FOR THE LAND TRANSPORT OF FISH

Preamble: These guidelines apply to the following farmed species of fish: salmonids and cyprinids. The guidelines may also apply to other *fish* species.

Article 1

The length of time *fish* spend on a transport should be as short as possible.

Article 2

Responsibilities

The welfare of *fish* during their transport is paramount and the joint responsibility of all people involved. These guidelines apply to the transport of *fish* within a country and between countries. The roles of each of those responsible are defined below:

1. Owners and managers of *fish* are responsible for the general health of the *fish* and their fitness at the start of the journey and to ensure the overall welfare of *fish* during the transport regardless whether these duties are subcontracted to other parties.

2. *Aquatic animal technicians* handling *fish* prior to loading as well as during loading and unloading have a personal responsibility for their welfare.

3. Transport companies, *vehicle* owners and drivers, in cooperation with the *Competent Authorities*, are responsible for planning the journey to ensure that the transport can be carried out properly according to *aquatic animal* welfare standards; these include:

    a) responsibility for choosing an appropriate and functioning *vehicle* and ensuring that competent staff are available for loading and unloading;

    b) responsibility for developing and keeping up to date contingency plans to address emergencies and minimise stress during transport;

    c) responsibility for correct loading of the *vehicle* with the *fish*, for regular inspections of the *fish* during the journey and for appropriate responses to problems arising.

4. Drivers should be properly trained in transport regulations, and the correct *vehicle* and equipment usage to ensure that *aquatic animal* welfare standards are applied. The driver is responsible for all documentation relevant to the journey.

5. Managers of facilities at the start and at the end of the journey are responsible for:

    a) providing suitable equipment for loading and unloading to ensure that *fish* welfare standards are applied;

    b) providing *aquatic animal technicians* to load and unload the *fish* in a manner that causes minimum stress and injury;

    c) minimising the opportunities for disease transmission while the *fish* are in the facilities;

    d) providing facilities and agents for washing and disinfecting *vehicles* after unloading;

    e) providing facilities and veterinarians, fish health biologists or other *aquatic animal technicians* be enable killing of the *fish* humanely if required.

6. The responsibilities of the *Competent Authorities* include:

    a) establishing minimum standards for *fish* welfare, including requirements for the inspection of *fish* before, during and after their travel, and appropriate certification and record keeping;

    b) approving *vehicles* for the transport of *fish*;

    c) ensuring appropriate awareness and training;

    d) setting licensing standards for drivers, *aquatic animal technicians* and managers;

    e) implementation of the standards, including through accreditation of / interaction with other organisations;

    f) providing the latest animal health information and designated restriction zones;

    g) monitoring and evaluating health and welfare performance.

7. Private veterinarians and fish health biologists involved in transporting *fish* and the associated handling procedures should have specialist training in such matters.

Article 3

Competence

1. All persons handling *fish*, or who are otherwise responsible for *fish* during journeys, should be competent according to their responsibilities listed in Articles 1 and 4. Competence may be gained through formal training and/or practical experience. Competence in areas other than *fish* welfare would need to be addressed separately.

2. Any necessary training should address:

a) fish behaviour, physiology, general signs of disease and indicators of poor fish welfare;

b) transport regulations;

c) operation and maintenance of equipment relevant to fish health and welfare;

d) water quality;

e) methods of fish handling during transport and associated activities such as loading and unloading;

f) methods of inspecting animals, managing situations frequently encountered during transport such as adverse weather conditions, and dealing with emergencies;

g) species-specific aspects of fish handling and care, whenever necessary;

h) appropriate record keeping.

Article 4

Planning the journey

1. General considerations

a) Adequate planning is a key factor affecting the welfare of *fish* during a journey.

b) Before initiation of travel, plans should be made in relation to:

i) type of *vehicle* required;

ii) route, taking into account distance, type and quality of road, topography, traffic conditions and availability of water exchange stations for *fish*;

iii) nature and duration of journey;

iv) care of the *fish* during the journey;

v) emergency response procedures.

c) Extreme weather conditions are hazards for *fish* undergoing transport and require appropriate *vehicle* design to minimise risks. In some extreme conditions of heat or cold, *fish* should not be transported at all.

d) As *fish* transport is often a significant factor in the spread of infectious diseases, journey planning should take the following into account:

i) anti-microbials should not be used prophylactically; if used therapeutically,

treatment should only be carried out upon instruction by a veterinarian or fish health biologist;

ii) before transport, the necessary biosecurity level should be assessed (e.g. washing and disinfection practices, safe places for changing water and treatment of transport water).

2. Contingency plans

There should be a contingency plan that identifies the important adverse events that may be encountered during the journey, the procedures for managing each event and the action to be taken in an emergency. For each important event, the plan should document the actions to be undertaken and the responsibilities of all parties involved, including communications and record keeping.

3. Vehicle and container design and maintenance

a) *Vehicles* used for the transport of *fish* should be designed, constructed and fitted as appropriate to the species, size and weight of the *fish* to be transported; special attention should be paid to the avoidance of injury to *fish* through the use of secure smooth fittings free from sharp protrusions.

b) In order to minimise the likelihood of the spread of pathogenic agents during a journey, *vehicles* and containers should be designed to allow the secure handling of dead *fish*, and thorough cleaning and disinfection prior to and after the journey.

c) *Vehicles* should be maintained in good mechanical and structural condition.

d) The *fish* should be able to be inspected en route to ensure that *fish* welfare standards are fulfilled.

e) Containers carried on *vehicles* should be adequately secured.

f) The maximum number of *fish* to be transported in a container should be determined before the *vehicle* is loaded and the biomass should be able to be measured during the loading process.

g) Documentation carried with the *vehicle* should include:

i) maintenance programme;

ii) transport logbook;

iii) check-list for completed cleaning and disinfection;

iv) licence from the *Competent Authority*;

v) drawings (plan) of the container and pipe system of the transport unit.

h) The transport unit should be of a type approved by the *Competent Authority* which should give consideration to the above factors.

4. Water and equipment on vehicle and container

a) Equipment to keep water circulation, water quality (e.g. oxygen, pH, temperature), and monitoring of water quality should be available.

b) Adequate water circulation and extra oxygenation which can be adjusted to meet variations in temperature during the transport to fulfil the needs of the *fish* species being transported, should be available.

c) Water filling and exchange should only take place at the place of loading or at a source that is approved by the *Competent Authority*. The transport water should be added to the container prior to loading the *fish* and the water should be oxygen saturated.

5. Documentation

a) *Fish* should not be loaded until the required documentation is complete.

b) The documentation accompanying the consignment (the journey log) should include:

i) journey travel plan including a contingency plan for emergencies and actions to be taken during the transport;

ii) date, time, and place of *loading*;

iii) *fish* species transported;

iv) information on biomass load, route, water quality and exchanges, and morbidity/mortality;

v) expected time, date and place of arrival and *unloading*;

vi) veterinary certification, when required;

vii) information to allow traceback to the premises of origin;

viii) *stocking density* estimate for containers/compartments in the consignment.

c) The transport log should be made available to the dispatcher and the receiver of the consignment as well as to *Competent Authority* upon request. Transport logs from previous journeys should be kept for a considerable time after completion.

d) When health certification is required to accompany consignments of *fish*, it should include:

i) appropriate information on the origin of the *fish*;

ii) health status including test, treatment and vaccination status.

6. Preparation of fish for the journey

a) *Fish* found unfit for transport by inspection by farm staff, driver or fish health biologist/veterinarian should not be loaded onto a *vehicle*.

b) A group of *fish* that is unfit to travel includes:

i) a group undergoing a disease event which would be exacerbated by handling or transport;

ii) a group with recent exposure to stressors or pathogenic agents.

7. Species-specific recommendations

Transport procedures should be able to take account of variations in the behaviour and needs of the *fish* species. Handling procedures that are successful with one species are often ineffective or dangerous with another.

Recommendations for specific species are described in detail in Appendices XXX. Some species may need to be physiologically prepared prior to entering a new environment; this may include food deprivation or osmo-regulatory capacity.

8. Nature and duration of the journey

The pre-journey preparation as well as the duration and route of a journey should be determined by:

a) the purpose of the journey e.g. biosecurity issues;

b) the ability of the *fish* to cope with the stress of *transport*;

c) the previous handling and transport experience of the *fish*;

d) intrinsic factors such as *stocking density*, species and life-stage being transported as well as metabolic rate of the *fish*;

e) the quality of water and the availability of water exchange facilities;

f) other extrinsic factors such as environmental conditions (e.g. air and water temperature), *vehicle* and equipment design, road and weather conditions as well as driving quality.

Article 5

Loading the fish

1. Since loading has been shown to be the procedure most likely to be the cause of poor welfare in transported *fish*, the issues which should be addressed to avoid unnecessary stress and injury to the *fish* include:

   a) crowding;

   b) improperly constructed or operated nets;

   c) improperly constructed or operated pumps, pipes and fittings;

   d) water quality.

2. The density of *fish* in a container or compartment should not exceed the maximum load (kg/m^2 and/or kg/m^3) for a given species and a given situation. Recommendations for specific species are described in detail in Appendix XXX. During loading, techniques should be used to measure and record the biomass.

3. Loading should be carried out by *aquatic animal technicians* with knowledge and experience of the behavioural and physical characteristics of the *fish* species being loaded.

Article 6

Travel

1. General considerations

   a) The driver should check the load immediately before departure to ensure that the *fish* have been properly loaded. Each load should be checked again early in the trip.

   b) Periodic inspections should take place during the trip to maintain acceptable welfare conditions. *Fish* found moribund or dead should be removed from contact with other *fish* and kept under biosecure conditions.

c) The driver should monitor water quality and make the necessary adjustments to avoid extreme conditions regarding water temperature, oxygen levels, CO_2 levels, pH changes and ammonia nitrogen.

d) The driver should utilise smooth, defensive driving techniques, without sudden turns or stops to minimise uncontrolled movements of the *fish*.

2. Emergency procedures

a) In the event of a *fish* health emergency on board, the driver should contact the relevant *Competent Authority* to determine the correct procedure to follow.

b) If the killing of *fish* is necessary during the journey, the *aquatic animal technician* should ensure that the killing is carried out in accordance with the guidelines for the *humane killing* of *fish* for disease control purposes, and their disposal in compliance with relevant animal health and environmental legislation.

c) *Aquatic animal technicians* at the place of unloading should be notified of increased mortality during the journey to enable appropriate arrangements to be made in accordance with the contingency plan.

Article 7

Unloading the fish

1. The principles of good *fish* handling during loading apply equally during unloading.

2. Some species of *fish* should be acclimatised if there is a likelihood of the *fish* being unloaded into water of a significantly different temperature.

3. *Fish* should be unloaded from the *vehicle* into appropriate compartments as soon as possible after arrival at the destination, but sufficient time should be allowed for unloading to ensure that the unloading proceeds smoothly and does not cause harm to the *fish*.

4. Unloading should be supervised by an *aquatic animal technician* with knowledge and experience of the behavioural and physical characteristics of the species being unloaded, and of the equipment being used.

5. Moribund or injured *fish* or *fish* otherwise disabled during a journey should be sorted out and disposed in accordance with the guidelines for the *humane killing* of *fish* for disease control purposes.

Article 8

Post-journey activities

1. General considerations

a) As the health of the *fish* may be compromised as a result of transport and/or change of environment, the *aquatic animal technician* receiving the *fish* should closely observe them during the post-journey period, and keep appropriate records.

b) *Fish* which show clinical signs following the journey should be examined by qualified personnel and as appropriate treated, isolated or killed in accordance with the Guidelines for the humane killing of fish for disease control purposes.

c) Significant problems arising during a journey should be evaluated and corrective actions taken if necessary.

2. Cleaning and disinfection

If the next journey will involve a new pickup or delivery point (or different type of load), *vehicles*, containers and other equipment used to transport *fish* should be cleaned and disinfected before re-use, in accordance with Appendix 5.2.1. of the *Aquatic Code*.

Article 9

Actions in the event of an inability to unload a consignment

1. The welfare of the *fish* should be the first consideration in the event of an inability to unload a consignment.

2. In the case of an international journey, the OIE dispute settlement mechanism should be followed to identify a mutually agreed solution which will address animal health and any other welfare issues in a timely manner.